

Digitile™

RPG is proud to announce Digitile, the first layin, glass reinforced gypsum, binary amplitude digital tile diffuser.

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"For many products there are three equivalent manufacturers, however, for some there are no equivalent manufacturers, and this leads to my story of three competitors I call **The Innovator, The Imitator and The Irrigator**"

For up to the minute information, we invite you to visit RPG's acclaimed web site: <http://www.rpginc.com>.

DIFFUSE NEWS



Dr. Peter D'Antonio
President and CEO

Everything Acoustic!

I have often wondered about the bid and spec process used in architecture to generate specs and solicit bids from manufacturers. Often the acousticians solicited advice is ignored by the contractor, whose motivation may be financial and not acoustical. There is another approach making headway in architectural design called Design Build, which in my view may provide the answer. With design-build, one company provides both design and construction services. There is a single point of accountability for all project related issues. The design-builder forms a team of consultants and subcontractors he feels will provide innovation and meet the Guaranteed Maximum Price. No substitutions, change requests, etc. are allowed. People working together for the good of the project!. **This is only the beginning....**



CONTINUALLY EVOLVING.....



Bill Elliot studied architecture, with a minor in musical performance, as an undergraduate at MIT, in Boston, MA. After taking a course in architectural acoustics, Bill added a physics curriculum to his studies. In addition to academic pursuits at MIT, Bill performed with the MIT Symphony Orchestra on violin, trumpet and viola, serving as Principal trumpet and Principal viola for several performances. After completing Bachelor of Science in Art and Design and Bachelor of Science in Physics degrees at MIT, Bill completed a Masters Degree in Architectural Sciences (concentrating in Acoustics) at RPI in Troy, NY. Bill worked as a summer intern at RPG on two occasions and we are happy to introduce him to you and welcome him to RPG as a Regional Project Manager and Product Applications Consultant, with additional responsibilities in research and development.

RPG JOINS THE USGBC

RPG supports the mission of the USGBC to promote buildings that are environmentally responsible, profitable and healthy places to live and work. In 1995, the USGBC developed the LEED rating system for developing high-performance, sustainable buildings.

Green is more than just LEED, however. It's a way of life, stewardship and simply makes good business sense. As an acoustical manufacturer, we are focused on providing sustainable acoustical products, however, indoor environmental quality is more than just acoustics. It also incorporates thermal comfort, indoor air quality and lighting quality, and is an integral aspect of high performance building design.

RPG's current range of products that may qualify for LEED Credits includes: Reapor, a completely recycled, non-combustible sintered glass absorber; Clearorber, a range of microperforated light transmitting plastics; BASWaphon, a smooth, seamless, sound absorptive plaster-like finish and Topakustik and Topperfo, perforated absorptive wood systems.

For more information on indoor environmental quality and high performance design, contact Peter C. D'Antonio, RPG's LEED Accredited Professional.

PROTECT THE SPEC!

In this issue, I would like to share my personal impression of how the current bid and specification process often fails. The Client hires and Architect to develop a design and possibly a Construction Manager. The Architect retains an acoustical consultant and solicits his professional advice to develop a specification, which is put out for bid to General Contractors, who in turn contract with Subcontractors. The Subs issue documents that manufacturers bid on. Since the acoustician is interested in the most appropriate technology for the project, he often bases his spec on a product from an innovative company. However, due to the three equivalent manufacturer mandate, two additional manufacturers must also be specified. For many products there are three equivalent manufacturers, however, for some there are no equivalent manufacturers, and this leads to my story of three competitors I call **The Innovator, The Imitator and The Irrigator**.

The Innovator:

The Innovator advances the state-of-the-art of an industry by introducing novel technology. He also is an active participant in the industry and carries out research, publishes technical papers, makes presentations at industry meetings, participates in standards activities, supports his products with proof of performance specifications and nurtures relationships with acoustical consultants.

The Imitator: The Imitator is not first to market, however, he studies and exploits the experience of the Innovator and through research develops a competitive product, respecting existing patents. This is good for the industry, because it motivates the Innovator to advance the state-of-the-art even further, which he is often capable of doing due to his leadership position.

The Irrigator: The Irrigator poorly and illegally copies

innovation with non-documented or unscientific performance specifications and hides behind the *three equal manufacturer mandate* and preys on the primarily financial motivation of the contractor, by offering ineffective products, labeled as equivalent, at a perceived lower cost.

Consequences

If the acoustician's spec of the Innovator is not protected and the contract is awarded to the Irrigator, the client squanders his investment, because the solicited advice of the acoustician is ignored; the performance of the project is jeopardized and the architect and acoustician receive all of the criticism and the ire of the owner. It just doesn't make dollars and sense, because apparent cost savings often result in expenditure of additional funds to correct the resulting problems.

The only one that benefits is the Irrigator!

By way of example, I'd like to describe two attempts by a large mid-west manufacturer of noise control products (The Irrigator) to counterfeit FlutterFree, a high frequency diffusing hardwood plank and the BAD Panel, a patented, flat, binary absorption diffuser. In Figure 1, the 8 kHz polar response of the RPG FlutterFree diffuses into three distinct scattering directions, but the Irrigator's response is essentially specular. For the BAD panel comparison, we use the autocorrelation. If the autocorrelation of the binary sequence used to design a binary amplitude diffuser (BAD) grating has a delta function at the origin and uniform, low side lobes, then the diffuser will scatter uniformly. It can be seen in Fig. 2, that the BAD panel is ideal, while the Irrigator has a bifurcated origin and non-uniform side lobes. In both these cases, the counterfeit appears visually equivalent to a contractor, however, the performance is significantly poorer and only the Acoustician can Protect The Spec! In depth white paper evaluations of counterfeits are available on our website.

"Save Your Neck, Protect The Spec!"

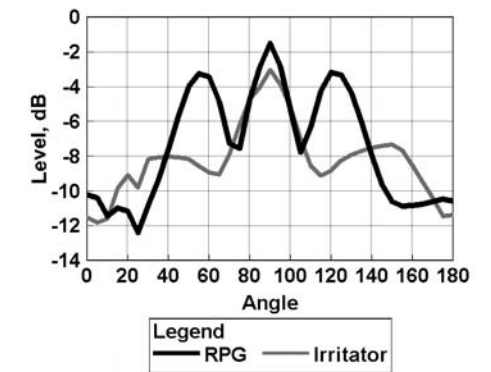


Figure 1. The RPG FlutterFree diffuses into three distinct scattering directions, but the Irrigator's copy is essentially specular, with low side lobes

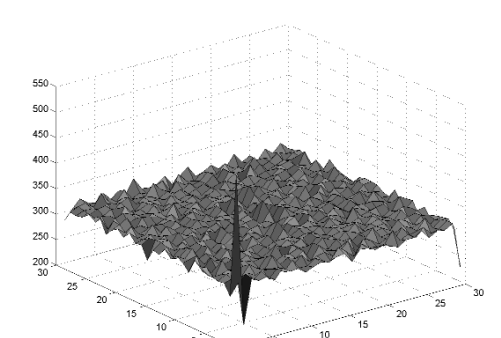
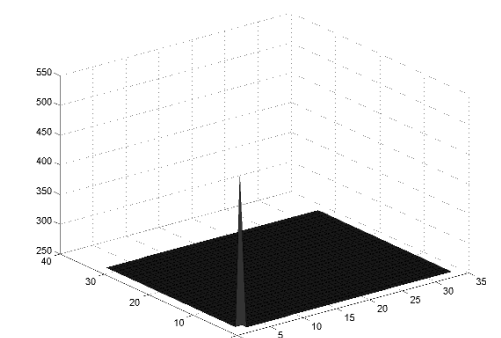


Figure 2. One quadrant of the autocorrelation function. (Top) The RPG BAD panel has a perfect origin delta function and low, uniform side lobes. (Bottom) The Irrigator's non-optimal binary design offers non-uniform, higher side bands and a bifurcated origin peak, resulting in non-uniform scattering.